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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/872,800 | 06/02/2001 | Takashi Niwa | S004-4309 | 4146 |

7590 08/26/2004

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EXAMINER

VUONG, BACH Q

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2653

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,800

Applicant(s)

NIWA ET AL.

Examiner

Bach Q Vuong

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ito et al. (US 6,304,527).

Ito et al., according to Figs. 1-16, shows a near field optical head and a method for producing an aperture comprising all features of the claimed invention as interpreted below:

Regarding claim 1, see Figs. 1-16 which show a method for producing an aperture comprising the steps of: forming an object for aperture formation having a tip of conical or pyramidal shape (see probe 4), having an opaque film provided on the tip and having a stopper, a height of the stopper is almost the same as that of the tip (see pads 2), displacing a pressing body having approximately a plane covering the tip and at least a part of the stopper by a force having a component toward the tip to form an aperture on a point of the tip.

Regarding claim 2, see Figs. 1-16 which show a method for producing an aperture comprising the steps of: forming an object for aperture formation having a tip of conical or pyramidal shape, having an opaque film provided on the tip and having a stopper, a height of the stopper is almost the same as that of the tip (see probe 4 and pad 2), displacing a pressing body having a planar part to come into contact with the tip and at least a part of the stopper in a

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direction toward the tip to form an aperture on a point of the tip (see Fig. 1B, 7B or 8B for details).

Regarding claims 3 and 4, see Figs. 1B, 7B or 8B which show a method for producing an aperture wherein a tip of conical or pyramidal shape and a stopper are formed simultaneously, and the object for aperture formation has a plurality of the tips and an aperture is formed on a point of a plurality of the tips simultaneously.

Regarding claim 5, see Figs. 1-16 which show a near field optical head comprising: a pointed tip (see near field light 9 or 15); an aperture formed on a point of the tip (see Figs. 4 and 10); and an opaque film covering the tip (see opaque thin film 20), wherein at least a part of the opaque film near the aperture is plastically deformed.

Regarding claim 6, see Figs. 9F and 10 which show a near field optical head further comprising a stopper having almost the same height as that of the tip.

Regarding claims 7 and 8, see Figs. 1-16 which show a near field optical head wherein a part of the tip projects are made of the same material and a part of the tip projects from a part of the opaque film (see probe 4 and thin film 20).

Regarding claim 10, see Figs. 1-16 which show a method for fabricating a near field optical head comprising the steps of: forming a tip of conical or pyramidal shape pointed toward a recording medium (see probe 4); forming a stopper having almost the same height as that of the tip (see pads 2); forming an opaque film on the tip (see opaque thin film 20); and forming an aperture on an apex of the tip by allowing a plate-like member covering the tip and at least a part of the stopper to come into contact with the tip to deform the opaque film over the apex of the tip (see thin film 6).

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Regarding claim 14, see Figs. 1-16 which show an information recording/reproducing apparatus for recording or reading information utilizing a near field light, comprising: a recording medium (see recording medium 11); a near field optical head having an aperture (see aperture 21 or 25) on a side of the recording medium; and a light guiding structure (laser light 8, 7) for guiding a luminous flux from a light source to the near field optical head, wherein the near field optical head has a tip of conical or pyramidal shape transparent to a light having a desired wavelength, an opaque film covering the tip, and an aperture formation mechanism (see Figs. 4, 7B and 8B for details).

Regarding claim 15, see Figs. 9B and 10 which show an information recording/reading apparatus wherein the aperture formation mechanism is a stopper having almost the same height as that of the tip.

Regarding claim 16, see Figs. 1A-1B which show an information recording/reading apparatus comprising a distance-control mechanism for controlling a distance between the near field optical head and the recording medium (see column 4, line 32 through column 4, line 33).

Regarding claims 17 and 18, see Figs. 1A-1B which show an information recording/reading apparatus wherein at least a part of a distance-control mechanism is air-bearing surfaces formed on the near field optical head and a piezoelectric actuator (see column 1, lines 12-35).

Regarding claims 19 and 20, see Figs. 1-16 which show an information recording/reading apparatus wherein at least a part of the distance-control mechanism is a protective part for the aperture and also serves as the distance-control mechanism (see Figs. 4, 7B and 8B for details).

Cited References

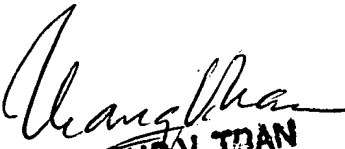
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references relate to a near field optical head and method and optical recording/reproducing system using near field optical head.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bach Q Vuong whose telephone number is (703) 305-7355. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BV
August 22, 2004


THANH V. TRAN
PRIMARY EXAMINER